



NUCLEAR DIVISION NEWS

A Newspaper for Employees of the Nuclear Division, Union Carbide Corporation

Vol. 3 - No. 16

Thursday, November 16, 1972

QUESTION BOX

QUESTION: Why are senior (past 55) Carbide employees discriminated against for promotions, raises, etc?

Also does Carbide no longer care about their employees after they retire?

Example: the DuPont Company has a full-time company man for each plant to check on retirees making sure that each one is visited at least once each year. The writer was recently at the funeral of a DuPont retiree and the company man was there helping in many ways.

It would be a good feeling for all employees to know that the company continued to care.

ANSWER: It is not possible to maintain personal contact with every employee who retires, but this does not mean that the Company no longer cares. Many employees move to other areas when they retire, and many of those who do not move live in various communities as far as 50 or more miles from the plants. Nevertheless, the Company strives to have someone in touch with the employee or the family when we learn of a need.

The Preretirement Counseling Program is designed to help employees plan for their retirement years. Retirees are encouraged to get in touch with the Retirement or Benefit Plans office when they need assistance. They are urged to participate in the Company's recreation programs and they have a lifetime pass to the Clark Center Recreation Park in Oak Ridge. All retired employees receive the Nuclear Division News.

Many supervisors keep in touch with their retirees. There, also, is the monthly pension check. When the Pension Plan was last revised in 1969, retired employees also received an increase in benefits.

These are some of the ways that show that the Company does care about its retirees.

As to salary treatment or promotions, employees of all ages are given the same consideration. Any employee in the upper part of his classification and salary range, as many older employees are, will not receive the same salary action as an employee who may be in the lower part

of the range. The past work record and the employee's potential for handling the new job are of prime importance in determining promotions.

QUESTION: Union Carbide makes a sizeable contribution annually to the United Fund. Why is this not given to the participating counties in proportion to employees living in those counties instead of to Anderson County only? (Only one of the three installations is located in Anderson County.)

ANSWER: The general practice in industry is for company gifts to go to the county or city in which the principal offices of the company are located. In our case, the executive offices of the Nuclear Division and all of the plants are located in the city of Oak Ridge, which are principally in Anderson County.

It may not be generally known that many of the agencies in the Anderson County fund provide services, assistance, or funds to residents of other counties, such as the Daniel Arthur Rehabilitation Center and the Mental Health Clinic. Also, the funds allocated to some of the youth development agencies are used by

(Continued on page 2)

Nuclear Division News schedule to be increased

The Nuclear Division News will expand its schedule with the next issue.

Beginning with the December 7 issue, the News will be published on a first and third Thursday of each month, rather than on a three-week basis as it has been published for the past year and a half.

This will increase the number of issues from 18 to 24 per year.

The schedule in coming months will be December 7, December 21; January 4, January 18; February 1, February 15; March 1, and March 15. The deadline for these papers will continue to be one week and one day prior to the publication date... or November 29, December 13; December 27, January 10; January 31, February 7; February 28 and March 7.

Nuclear Division employees reach 99.5 percent of United Fund goal!

"It always feels great to be a part of a winning team. Each of us that has worked in or contributed substantially to the United Fund Appeal is a member of the team that has just won," commented H.H. Stoner, general chairman for the Oak Ridge plant drive.

"We achieved 99.5 percent of a very difficult goal and the employees pledged over \$354,000, an exceptional eight percent increase over last year's contributions.

"Also praiseworthy is the excellent rate of giving among employees. The \$25.80 per capita rate compares quite well with employees from other industries.

"Employees also contributed greatly to reducing the effort of the drive by signing their cards for continuous payroll deduction. Over 4000 employees are now giving through continuous payroll deduction, an increase of 46 percent from last year.

"Share feelings of pride"

"All of us can share feelings of greatfulness and pride that our working associates are people who care about the well-being of others, and are responsible people who will support the agencies serving them and their community.

"Thanks to the many of you who have worked so hard."

In several of the surrounding counties Union Carbide Oak Ridge employees constitute the largest single givers group in that county. Contributions (all figures are approximate since final audit is not completed) designated by the employees to Anderson County were \$199,013; Knox, \$85,400; Roane, \$43,125; Loudon \$14,375; and Morgan \$8,700. Contributions to other counties totaled \$3,500.

Paducah plant UF leaders were also gratified by reports which became final, showing a total of 1,174 employees at the Kentucky plant gave \$37,792.80 to United Appeal's in that area. Individuals recognition of accomplishments there will be noted in the next issue of the Nuclear Division News.

Thanks to contributors, volunteers

James A. Dick, campaign chairman of the United Way Appeal in Knox County, in thanking Union Carbide employees last week, stated: "Year after year, Knox County employees of Union Carbide have given more through the United Way Appeal. Many employees also give hundreds of volunteer hours serving on agency boards, working in the campaign,

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SECOND MILE — The Electronic Accounting Machine section of the Computing Technology Center got together recently to see that their division went over its goal in the United Fund Drive. They, as a group, took coffee money funds, which normally go to charities, and gave it as a unit to the drive in the plants. (They have contributed to various orphanages in the area, as well as other worthwhile projects.) Their efforts, combined with renewed vigor on the part of other drive leaders, helped put the CTC employees 101.6 percent over their goal! From left are Jack A. Holt, George D. Rymer, Joe C. Jennings, Bobby G. Hyde, Jay A. Johnson, Millard D. Manry, Fred W. Bean, Walter L. Ford, Ray E. Dickert and David J. Roberts. Not present when the photo was made were Earl E. Stout, John D. Neal, and Ronnie G. Goin. Section Head Ford accepts the donation above from Joe Jennings. Many other groups made notable contributions to this year's drive; however, space would just not permit publishing all of them.

NUCLEAR DIVISION SAFETY SCOREBOARD

Time worked without a lost-time accident through November 9:

Paducah	31 Days	209,00 Man-Hours
ORGDP	28 Days	448,000 Man-Hours
ORNL	24 Days	473,238 Man-Hours
Y-12	10 Days	406,000 Man-Hours

Safety is everyone's concern!

ORNL engineer awarded Army's distinguished service citation



HONORED BY ARMY — Cresson H. Kearny, ORNL's Civil Defense Research Project, was recently awarded the Distinguished Civilian Service Award, the highest honor the U.S. Army can give a civilian. Kearny, a retired Army major, has worked more than 30 years developing and implementing better equipment used by the foot soldier in jungle combat.

An ORNL research engineer who built a better combat boot and literally lightened the pack of the allied infantryman in Vietnam has been awarded the highest honor the U.S. Army can give a civilian.

Cresson H. Kearny of the Laboratory's Civil Defense Research Project, now part of Health Physics Division, was awarded the Distinguished Civilian Service Award at a special ceremony recently at the Pentagon in Washington, D.C. The award was presented by Lt. Gen. Bruce Palmer, Vice Chief of Staff, U.S. Army.

Applied wartime experience

Kearny, a retired army major and World War II veteran, has worked intermittently for more than 30 years developing and implementing better equipment used by the foot soldier in jungle combat. His career has taken him to such far away places as Panama, Burma, China, South America, and Vietnam.

Kearny is an original member of the ORNL Civil Defense Research Program which was organized about ten years ago by Nobel Prize winner Eugene Wigner. Much of his work in this capacity has been in applying to civil defense his wartime experience in developing equipment and techniques to endure difficult environments. A major effort of Kearny's work at ORNL has been the design of expediency shelters that can be built by nearly anyone in two days or less, using readily available tools and materials.

In the late 1960's, on loan from ORNL, Kearny spent a total of six months over a two-year period in Vietnam where he served as a member of the staff of the Science Advisor to Gen. Westmoreland and, later, Gen. Abrams. During that time he was successful in getting about 20 light-weight items of combat gear adopted by the military for use in the war. These included some items of his own design, such as improved-traction and self-cleaning soles for combat boots, a six-pound pneumatic boat capable of carrying three men and their full-field equipment, and dual purpose pack liners and canteen bladders buoyant enough to allow their wearers to float across streams.

Aided infantrymen

Since Kearny's work in Vietnam hundreds of thousands of his suggested items of equipment have been mass-produced and issued to U.S. and allied infantrymen in combat.

Kearny's interest in improving the foot soldier's welfare goes back to pre-Pearl Harbor days when he commanded the Army's Jungle Experiment Group in Panama. His first invention was a mosquito-proof hammock. Later in the war, Kearny served in Burma and China as a member of an OSS demolition and sabotage group. The "chaos and death" he saw there was largely responsible for his subsequent interest in civil defense.

Just a few weeks ago the Civil Preparedness Agency (formerly the Office

of Civil Defense) officially adopted a manually-operated air pump that Kearny invented for ventilating shelters. The "Kearny Air Pump," as the agency has re-named the device, can be built easily by following instructions the Agency is distributing throughout the nation.

The Kearnys have five children: Cresson, Adelia and Dianna, all grown and living elsewhere, and Susanna and Stephanie, students in the Oak Ridge Schools.

Among the dignitaries attending the Pentagon ceremony were Undersecretary of State John N. Irwin.

The citation reads as follows: For distinguished service and scientific advice to the Commander United States Military Assistance Command, Vietnam, from November 1967 to July 1968; and to the Chief of Staff, United States Army, during 1971-1972. On leave for voluntary duty in Vietnam, Cresson Kearny applied with singular initiative and success his wide knowledge and experience of warfare in the tropics towards improving many items of personal combat equipment for the individual infantrymen in Vietnam. After returning from Vietnam, his unremitting efforts, dedication and perception motivated a resurgence of interest in protective shelter construction against atomic attack. His technical expertise, his great personal energy in constructing prototype field-expedience shelters, and his infectious enthusiasm, resulted in significant improvements in the army's radiological defenses. Cresson Kearny's many and varied contributions to the combat effectiveness and welfare of our tactical forces in Vietnam and to the strategic posture of the United States Army reflect great credit on himself and the Department of the Army.

Signed: Robert F. Froehlke
Secretary of Army
Washington, D.C.

The next issue will be dated Dec. 7.
The deadline is Nov. 28.

NUCLEAR DIVISION NEWS



Published Every 3 Weeks For
The Employees Of

UNION CARBIDE CORPORATION
NUCLEAR DIVISION

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QUESTION BOX

(Continued from page 1)

the agency to provide services for many counties.

So, although the Company's United Fund contribution goes only to Anderson County, a portion of it is used to provide services for residents of other counties.

QUESTION: I am a female employee, single, with 28 years' company service. When I am 54 years old I will have 36 years' company service. How will this benefit me toward early retirement?

(I read in some of the booklets that if your age and Company Service add up to 90, you can retire at that time, but I have been unable to find the place where I read it.) I am a weekly paid employee.

ANSWER: Although 65 is the normal retirement age, Union Carbide's Pension Plan permits an employee to retire with full benefits at age 62 with 10 years' company service credit or at age 60 with 30 year's service. Reduced benefits are available as early as age 55 if an employee has 10 years' service. There is no "age plus service equal 90" provision. This provision has been introduced in a limited number of pension plans in recent years.

In your case, you will be eligible for full pension benefits at age 60 or for reduced benefits at age 55.

QUESTION: What is the Carbide policy on coffee breaks, or if you do not drink coffee, just a break?

Also, does the Tennessee state law of 15 minutes in the morning and 15 minutes in the afternoon for women apply to Carbide employees? Or is Carbide exempt from the state laws?

If you end up working without a break or if you are being watched or timed while you drink your coffee, what can an employee do about it?

If your boss points out that you take more than 30 minutes for a lunch hour and therefore do not deserve a break, can one do anything about it?

What do you suggest when a straw boss follows you to the rest room?

ANSWER: The Nuclear Division does not have a formal policy on coffee breaks. If a specified break time is allowed, this is determined by supervision and is usually at a time allowed by operational requirements. Tennessee does not have a law providing for break time of any type for either men or women.

All employees are observed from time to time by supervision but this is normally not constant or harrasing. The tone of your letter would imply that you may be more interested in break time than in your work, which would normally bring about closer observation by supervision.

If you feel that you are not being treated fairly, discuss the matter directly with your supervisor, or with the Industrial Relations or Personnel Division.

ADVANCED DEGREES

These ORNL employees received advanced degrees in recent graduations at The University of Tennessee.

Receiving the Ph.D. were Clay E. Easterly in physics, George R. Hoffman in botany, Paul B. Selby in biomedical sciences and John E. Tansil in physics.

Receiving the M.S. in zoology was L.E. Roberson.

Junkins, Barber, ORGDP, elected to top offices in Chemical Society

The East Tennessee Section of the American Chemical Society recently named new officers at the annual meeting held on The University of Tennessee campus. The following officers were elected: J. Howard Junkins, Technical Information Department at the Oak Ridge Gaseous Diffusion Plant, chairman-elect; Ronald Magid, UT, secretary; George Kabalka, UT, treasurer; David A. Shirley, UT, counselor; E. John Barger, Materials and Systems Development Department, ORGDP, alternate counselor; and Roswitha Haas, Knoxville College, executive committee at large.

Junkins is a graduate of the University of Kentucky and came to ORGDP in 1947. Prior to that time, he worked on the technical staff at UCC operations in Uravan, Colo., and Bishop, Calif. He was in chemical development at ORGDP until 1968, when he became head of the Technical Information Department in the Laboratory Division. He is past-president of the Oak Ridge Branch of the Scientific Research Society of America (RESA), the industrial affiliate of the Society of the Sigma Xi.

He and his wife live at 396 East Drive, Oak Ridge. They have a daughter, Catherine, who teaches in Morristown.

Barber received his Ph.D. at the University of Washington and came to ORGDP in 1948. Earlier, he had worked for Union Carbide as a group leader at the SAM Laboratories at Columbia University.

He is treasurer of the Kingston Lions Club, a committeeman in Boy Scout work, and an elder in the Bethel Presbyterian Church.

The Barbers live at 709 Sunset Drive,



Barber

Junkins

Kingston. They have four children, Dan and Don at home; Tom, attending Maryville College; and a married daughter, Gail Asbury, in Winston-Salem, N.C.

The East Tennessee Section of ACS is composed of 650 local members of the 110,000-member society. Its purposes are to encourage the advancement of chemistry; to promote research; to improve the qualifications and usefulness of chemists through high professional standards; and to promote scientific interests and inquiry.

Clark has one-man art show at Rensselaer on music folk

Bill Clark, ORNL's Information Division, has a one-man show, "Music People," now on display at the Cultural Center at Rensselaer Polytechnic Institute, Troy, N.Y. His show is part of an annual festival which will also include readings by two poets, Ruby Dee and Ossie Davis, a competition of one-act plays, crafts displays and other activities.

The paintings are a series of studies of music people who live in or have performed in the East Tennessee area. An attempt has been made to show some of the many differences and at the same time some of the similarities that exist right now. Some are accomplished musicians, others just pick a little and sing a little. Some are mountain folk, some from the city, and some are roving minstrels.

Clark's show opened on October 22 with a slide presentation showing some of the subjects playing and singing and some of the music festivals, clubs, square dances and other places they were found all around the East Tennessee area. Accompanying the slides were tapes of some of their music recorded live.

The slide presentation was followed by a talk about the music, the people and other experiences in compiling material for this two-year project.

Completing the presentation was another slide show tracing the process and progress of one painting.

Clark is a technical illustrator in the Graphic Arts Department. He is a graduate of Ringling School of Art in Sarasota, Fla., and the Famous Artist School in Westport, Conn. He and his wife Betty, who is also an artist, have exhibited their



work in local shows in Oak Ridge, Knoxville and the Hickory Museum of Art, Hickory, N.C.

After opening his show at Rensselaer, Clark was seriously injured in an automobile accident in Albany, N.Y. He is still hospitalized there.

Company Service

PADUCAH
25 YEARS

James M. Gardner.

20 YEARS

Carroll Graves Jr., William M. Moffitt, Charles W. Elliott Jr., Will Wright Jr., Forrest M. Blain, W. Ford Cherry, Joe E. Hargrove, Hubert P. Jackson Jr., David A. Carlson, Edward W. Kincer and Thomas R. Cole.

Brooks and Sullivan named in ORNL mathematics division

Two ORNL staff members, Alfred A. Brooks and Joseph G. Sullivan Jr., were recently appointed assistant directors of Mathematics Division.

Brooks came to ORNL from heading the Scientific Applications Department at Computing Technology Center in 1970 and has headed the Computer Applications Department since then. He joined Union Carbide in 1956 but previously worked with the SAM Laboratories of Columbia University from 1943-1945 and the Tennessee Eastman Corporation at Y-12 during 1945 and 1946. He received the Ph.D. degree in physical organic chemistry from Ohio State University in 1950.

He and his wife Arlene live at 100 Wiltshire in Oak Ridge. Son Freddie and daughter Barbara attend UT. He is a member of the Chicago Mountaineering Club and the Tennessee Valley Hunt Club.

Sullivan joined ORNL in 1956. Previous to his new position he headed the Programming Systems Department. He received the B.S. in mathematics from The University of Tennessee. He and his wife Irene and sons, Nicky and David, live at 1014 West Outer Drive in Oak Ridge. He is a Chess Master and active in Recording for the Blind.



Sullivan

Brooks

Pinajian to serve at AEC India post

John J. Pinajian, ORNL, has been appointed to serve as the AEC Scientific Representative in Bombay, India. Pinajian replaces H. Fritz McDuffie, who has since returned to the U.S. and is director of ORNL's Information Division. Pinajian will assume his duties in Bombay in November.

In accepting this post, Pinajian will be on a leave of absence from his present



Pinajian

position as development specialist in Isotopes Division. He has been with the Laboratory since 1955, specializing in the field of ultra-high purity radioisotopes, their production, decay scheme measurements and application for re-

search.

In 1966 and 1967 under ORNL's sister laboratory agreement he served as advisor for the Thai Office of Atomic Energy for Peace in Bangkok. Other foreign experience includes that of guest scientist on loan to N.V. Philips-Duphar in The Netherlands in 1968-69.

He has contributed to a number of books in the nuclear field, and his published papers and articles appear regularly in physics and chemistry technical journals. He received degrees at Rutgers and Purdue Universities.

Company Service

ORNL
25 YEARS

Harry C. Maggart, Lee E. Tucker, William L. Russell, Arnold J. Wallace, Roland K. Abele, Zell Combs, Clarence R. Wright, Elbert F. Marguerat, William C. Fox, Willie B. Towns, Julian B. Gissell, George H. Johnstone, Wilford M. Gardner, Gerald Hamby, George B. Berry.

20 YEARS

Harriett A. Steinke, Walter J. Muenzer, Anderson B. Galyon, John M. Canupp, Duke R. Frizzell, Percy A. Staats, Emmett F. Jacobs Jr., Hubert Oliphant.



OFFICIAL PHOTOGRAPH — The members of the United States Atomic Energy Commission are seen at a recent meeting. Seated from left are Commissioner James T. Ramsey, Chairman James R. Schlesinger and Commissioner Clarence E. Larson. Standing are Commissioner Dixy Lee Ray and Commissioner William O. Doub. Commissioner Doub was banquet speaker November 15 at the Precision Machining and Gaging Clinic held in Oak Ridge.



CHRISTMAS PARTY ACTION — Hunkey's Bears will perform for children of Union Carbide employees in the Oak Ridge area at the Christmas parties set for December 22 at the Oak Ridge High School auditorium. Five parties are set, at which Carmen Del Molino and a trapeze act will appear, alternating with the bear act. A party for Paducah employees' children is set for 9 a.m. December 9 at the Arcade Theater.

Stage set for gala Christmas parties in Paducah, Oak Ridge

Applications for tickets to the children's parties appear below, both for parents in the Oak Ridge and Paducah areas.

Oak Ridge children will enjoy the day of December 22 at the Oak Ridge High School with parties set at 9 and 11 a.m. 1:30, 3:30 and 5:30 p.m. Highlighting the parties, including a visit with old Santa, will be Hunkey's Bears, alternating with Carmen Del Molino trapeze act.

Paducah children will gather at the Arcade Theatre, December 9, at 9:00 a.m. They will be out in time to enjoy the downtown Christmas parade in Paducah.

Both parties require a ticket for each child. Union Carbide parents may apply through the plant mails for tickets (for themselves, as well as the children). Tickets will be mailed to the home address. Please give complete address. Year after year the Recreation Department indicates

that employees will forget to put the down they live in on the application; some will leave their name off! This makes filling the application a little difficult.

Company Service

Y-12 25 YEARS

Danty T. Cook, Theodore R. Jordan and Jesse A. Lewis.

20 YEARS

Kenneth S. Murphy, Hacker Woody, Craig Waldroup, John F. Hood, Howard S. Smith, William E. Powell, Harold Rector, Calvin C. Devaney and James C. Brewer.

Application for Tickets To Christmas Parties

FOR CHILDREN OF OAK RIDGE UNION CARBIDE EMPLOYEES

(AGES TWO-10 ONLY)

FRIDAY, DECEMBER 22

Plant

Employee's Name Badge No.....

Home Address

Plant Address

Number of Tickets (Children).....

Number of Tickets (Adults).....

— CHECK TIME PREFERRED —

Friday, December 22 9 A.M. 11 A.M. 1:30 P.M.

Only 3:30 P.M. 5:30 P.M.

Please check first and second choice (write in space "1" or "2") as only a limited number of tickets will be issued for each party. Preference will be given early applicants and if tickets for first choice are exhausted, tickets for second choice will be issued.

Return this form, properly and completely filled in, to the Carbide Recreation Office, Building 9711-5, Stop 1, Y-12 Plant. Please apply for tickets before December 19. The required number of tickets will then be mailed to parents at their home or plant addresses.

DIVISION Retirees

6-19412

6-19413

16200

15650



McMichael

Nicholson



Brosi

Beckner

Y-12 lists two retirements for November... John T. McMichael, Process Maintenance; and James H. Nicholson, Chemical Services.

McMichael, a native of Waynesboro, Miss., lives at Route 5, Clinton. He came to Y-12 December 10, 1951.

Nicholson, a native of Decatur, Ala., holds a B.S. degree in chemistry from Alabama Polytechnic Institute, and has attended the Walton School of Commerce. He lives at 126 Wade Lane. He joined Union Carbide May 8, 1944.

Pearl Black elected early retirement last month due to illness in her home. She lives with her sister in the Bethel Community, above Clinton. Miss Black came to Y-12 in October, 1943. She was in Y-12's Chemical Services.

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Lampley

James A. Lampley will retire from ORGDP at the end of this month. He is a laboratory analyst in the Laboratory Division, and came to ORGDP January 8, 1945. He lives at 145 North Alabama Road, Oak Ridge.

Three long-time employees will be retiring from ORNL this month.

William J. Beckner is a fire and guard captain in Laboratory Protection Division. He joined ORNL in April of 1943. He lives at 104 Venus Road in Oak Ridge and plans to do interior decoration installation after retirement.

Albert R. Brosi is a senior research staff member in Chemistry Division. He joined ORNL in October of 1943. He lives at 105 W. Price Lane in Oak Ridge.

3530-72



Muenzer

Walter J. Muenzer is a design engineer in General Engineering Division. He joined ORNL in November of 1952. He lives at 116 Tabor Road in Oak Ridge.

ALL CARBIDE SKEET

Charlie Asmanes, Y-12, took top honors in September Skeet firing, with a 48.528 top score. ORNL's George Kwiczen posted a 48.240; and Alan Van Hull, Y-12, fired at 47.978. Bob Allstun, Y-12; Hoe Comolander, also from Y-12; and Vern Raaen, from ORNL; fired under penalty from previous winnings.

APPLICATION FOR TICKETS

Requests MUST Be In By November 20

CARBIDE CHILDREN'S CHRISTMAS PARTY

(For Children Ages 2 to 9)

SATURDAY, DECEMBER 9, 9 A.M.

ARCADE THEATRE, PADUCAH, KY.



Employee's Name Badge No.....

Home Address

(Please Print Street Address or RFD, City and Zip Code)

Number of your children who will attend the party (please list):

(BOYS) NAME Date of Birth (GIRLS) NAME Date of Birth

NAME Date of Birth NAME Date of Birth

NAME Date of Birth NAME Date of Birth

List names, ages and sex of children very accurately. The information will be used to bring present records up to date.

NOTE: Fill out form completely and return as soon as possible, but not later than November 20, to the Recreation Office, Union Carbide Corporation, P.O. Box 1410, Paducah, Ky. 42001. Tickets will be mailed to parents at their home addresses.

New jointly-developed process reduces sulfur dioxide emission

A new process which sharply reduces sulfur dioxide emissions from sulfuric acid plants has been developed by Union Carbide Corporation and J.F. Pritchard and Company, a subsidiary of International Systems and Controls Corporation.

The new process reduces the SO₂ content of the emission gases from sulfuric acid plants to less than 150 parts per million, about 50 per cent more effective than required by the Environmental Protection Agency. Concentrations of sulfur trioxide and sulfuric acid in the emission stream are also reduced to well within EPS restrictions.

The key to the new process is Union Carbide's development of a unique, regenerable organic solvent system. In this closed-cycle system, SO₂ is absorbed in the solvent which is subsequently regenerated by a combination of heat and steam stripping in a separate column. The regenerated solvent is returned for use in the waste gas column. The SO₂ recovered can be used to produce additional sulfuric acid, thus raising acid plant efficiency to over 99.8 per cent.

The new solvent system is the latest in a series of pollution control developments by Union Carbide for wastewater treatment, solid waste removal, and air pollution control of sulfur and nitrogen oxides and mercury vapor.

Evaluation by Pritchard engineers indicate that the new process offers attractive capital and operating economics. It can be installed at existing sulfuric acid plants with only a one-day shut down, or incorporated into new facilities.

Pritchard has taken a license from Union Carbide to employ the solvent system in a total process of its design for SO₂ removal. The company will market the process to the sulfuric acid industry and will investigate its possible application for other waste gas streams containing sulfur oxides including power plant stack gases.

An international engineering and construction company serving the process industry, J.F. Pritchard is also marketing a hydrogen sulfide pollution control process.



MARCH OF TIME — 23 years ago, in November, 1949, the group below posed for a department picture at the Oak Ridge Gaseous Diffusion Plant. Above, they pose in the same order they appeared in the original photograph. In the original photo, from left in the front row, are R. Calvin McDaniel; Thomas M. Williamson Jr., who left ORGDP in 1962; W. Watterson, deceased; John T. Dickenson; John C. Keylon, Conly Loy; S. Talley, deceased; Oren Green; and L. Barnett, who left ORGDP in 1953, believed now living in Chicago. Standing are Robert A. Winkel, Herbert L. Bowden, who retired in 1965; Margaret Vester; Larry A. Studinger; Raymond H. Stanley, who left in 1961; James H. Dillon, deceased; Martin C. Duff; Cecil H. Seeber; Harley Ramey; Herbert T. Potter, retired, living in Harriman; Jack Hayes, deceased; Thomas J. Walker; William C. Lisenbee; and Verdell T. Arnwine, deceased. In the photo above the remaining people are, from left, front row, McDaniel, Dickenson, Keylon, Loy and Green. In the back row are Winkel, Margaret Vester, Studinger, Duff, Ramey and Lisenbee.



Nuclear Division deaths

Edward S. Jackson, a process foreman in Y-12, died October 23, after a brief illness.

A native of Knoxville, Mr. Jackson had been employed at Union Carbide 22 years. The family home is at 214 Alhambra Road, Oak Ridge.

Survivors include his wife, Mrs. Dorine Olinger Jackson; his mother, Mrs. Lillian Jackson; two sons, Michael and Harry; two daughters, Mrs. Betty Manning and Mrs. Carol Wilkes; one brother; three sisters; and six grandchildren.

Graveside services and burial were held at Highland Memorial Garden, Knoxville, with the Rev. Gordon S. Sterchi officiating.

John W. Bradham, Y-12's Process Maintenance, died at his Oak Ridge home October 28, from an apparent heart attack. He had worked at ORGDP, and most recently hired in at Y-12 in 1971.

The Bradham home is at 115 Temple Road, Oak Ridge.

Survivors include his wife, Mrs. Beatrice Cochran Bradham; a son, William Bradham; two daughters, Mrs. Betty Janney, and Nancy Bradham; six sisters; and three grandchildren.

Funeral services were held at Martin's Funeral Chapel with the Rev. Lee Morris officiating. Burial was in Anderson Memorial Gardens.

Foreign travel

Donald E. Foard, ORNL Biology Division, will attend the International Symposium on Fundamental Approaches to Plant and Animal Improvement in Cali, Colombia, November 27-December 1.

James E. Turner, ORNL Health Physics Division, will act as World Health Organization (WHO) consultant to the Directorate of Radiation Protection (DRP), Bhabha Atomic Research Center at Bombay, India during January and February, 1973.

John D. Hicks, ORGDP Fabrication Maintenance Division, died at his Oak Ridge home October 23, from an apparent heart attack. He came with Union Carbide in 1945. He was a native of Ardmore, Tenn.

Survivors include his wife, Mrs. Edna J. Hicks, 119 West Iona Circle, who also works at ORGDP; a daughter, Mrs. Sheila Pickrell, with her husband who is stationed in Adano, Turkey; a brother and a sister.

Services were held at Weatherford Funeral Home with the Rev. Manney Reid and Robert Wallace officiating. Interment followed in Anderson Memorial Gardens.

Paul C. Pennington, Y-12's Metal Preparation, died October 28, at the Oak Ridge Hospital, from a heart attack. He had previously suffered a heart attack in the 1960's.

A native of South Carolina, Mr. Pennington came to Y-12 in May, 1944. He served in the U.S. Army during World War II.

Survivors include his wife, Mrs. Dorothy Rainwater Pennington; two daughters, Mrs. Jennetta Hutson and Mrs. Carol Meade; his mother, Mrs. S.H. Pennington; two brothers; three sisters; and three grandchildren.

The Pennington home is on Foust Carney Road in the Claxton Community.

Funeral services were held at the Holley-Gamble Funeral Home, with the Rev. Bill Fowler officiating. Interment followed in the Tennessee Valley Memorial Gardens.

Denver H. Summers, a welding technologist in ORNL's Inspection Engineering Division, died November 3 at his home in Kingston following a lengthy illness. He joined ORNL in January of 1948. He was a veteran of World War II.

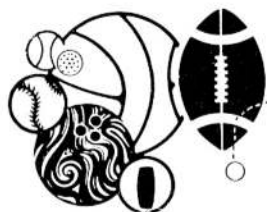
Mr. Summers is survived by his wife Christine; a daughter, Mrs. Milton Freels of Kingston; and a son, Arthur, of Powder Springs, Ga.

Funeral services were held Sunday, November 6, at the First Baptist Church in Kingston with burial in Roane Memorial Gardens.

LOVE OF AMERICA

"When an American says that he loves his country, he means not only that he loves the New England hills, the prairies glistening in the sun, the wide and rising plains, the great mountains, and the sea. He means that he loves an inner air, an inner light in which freedom lives and in which a man can draw the breath of self-respect."

..... Adlai Stevenson



SPORTS NOTES



HIGH GAME — Jack Cunningham, right, receives an American Bowling Association belt buckle for rolling the highest scratch game in the Oak Ridge men's bowling association for the 71-72 season... a big 289 game! Roy Clark, secretary of ORNL's C League presents Cunningham the coveted award.



Baker

Burrage

PADUCAH GOLF

Winners in the second annual White-side Memorial Golf Tournament held at Paxton Park Golf Course are John Burrage and Frank Baker. Burrage, who took the overall championship in the competition, is in Power and Utilities; and Baker, the handicap winner in the event, is a foreman in Paducah's Roads and Grounds Department.

The Village Greens Golf Course at Kentucky Dam State Park provided the scene for the final Mixed Scrabble for Paducah golfers. 18 hardy foursomes navigated the long and hill course with the Hester Albritton team of JoAnn Longton, Jim Brown and Keith Bryant shooting a five-under par to nose out Waldo Golliher's fine crew of Pinkey Dodson, Mark Curtis and Dick Baker by one stroke. Clyde Hopkins', Archie Miller's, and Marshall Jones' teams took third, fourth and fifth places respectively by a tie-breaking play-back when each team came in with a two-under-par.

ALL CARBIDE BOWLING

The SASA's stand six points ahead of the Lucky Strikers in the Carbide Family Mixed League, rolling each Friday. Sewell Brown and Wanda Sewell hold scratch honors thus far.

ORNL BOWLING

The Ten Pins hold a rather commanding lead in the A League, with more than 20 points, far in advance of the Pockets. The Misfits' Phil McCulley recently rolled a 220 game.

The Limits are three point leaders in the E League, ahead of the Woodchoppers, who lead the Guttersnipes by one. Al Longest of the Limits rolled a 617 scratch series, recently, boosted to a 707 with handicap added. His series tallied at 184, 218 and 215 scratch!

The Barracudas are barely ahead of the Pin Heads in Wednesday's C League. Gino Zanolli posted a 223 game for the Pin Heads on November 1.

The Pick-Ups are barely ahead in the ORNL Ladies League, posting highs against the Mousechasers and the HPettes.

Technical papers will be offered by Y-12ers

Personnel from Y-12 will be giving papers at three national meetings during November.

Earlier this month, a paper by Roy W. Morrow and Ronald J. McElhaney, of the Plant Laboratory, entitled "Determining Lead in Urine by Flameless Atomic Absorption Spectroscopy," was given at the American Chemical Society's Southeastern Meeting in Birmingham, Ala.

Gary R. Handley of the Radiation Safety Department is presenting "Criticality Safety of Some Water-Sprinkled Non-Cubic Array" at the American Nuclear Society Meeting in Washington, D.C., November 12-17.

Development Division's Roy L. Huddleston and Bruce R. Dewey of The University of Tennessee have co-authored a paper entitled "Optimization of Multilayer, Cylindrical Vessels Loaded by Pressure and Thermal Gradient" to be given at the American Society of Mechanical Engineers Meeting in New York, N.Y., November 28.



PADUCAH GOLF WINNERS — Jim Brown, JoeAnn Longton and Keith Bryant fired a five-under-par to win the Village Greens golf tournament recently at Kentucky Dam State Park. Hester Albritton was not present for the above photo.

Paducah couple wins jackpot, a luxury vacation in Florida



Toni and Jake Piercy

Toni and Jake Piercy pulled in the jackpot on a hole-in-one contest at the Guys and Dolls Golf Tourney at Midland Hills Golf Club, recently. Piercy, in the Paducah Plant's Plant Engineering, took first place in the Carbondale, Ill. golf contest.

The jackpot consisted of accommodations for six people at a four-bedroom home complete with a 20-ft. run-about, heated swimming pool, and the use of a luxury car. Midland Hills Club owner Tom Kennedy, who also owns the Florida house, said that the Piercys would especially appreciate the fact that there are nine different golf courses within 20 minutes driving from the cottage!

Piercy's winning shot from the 117-yard tee, over water, ended up just three feet, two and one-half inches from the hole on the rolling elevated green. The nearest competitor was a mere one and one-quarter inch away!

Before the Piercys become overrun with newly found friends, they say they intend to take their children plus some of their friends, and possibly another couple to complete the houseguest list.

ALL CARBIDE VOLLEYBALL and BASKETBALL

The Recreation Department is taking teams for entry in the winter volleyball and basketball leagues, telephone 3-5833. They need team name, name and phone number of captain and co-captain. Both men and women are invited to join leagues. Deadline for entry is November 24.

Y-12 BOWLING

The Parbusters hold a one point lead in the C circle as the Badger and Cobras cling in there tied with second place. Highs recently saw Bill Ladd roll a 268, Del Ducay a 257, and George Cantrell a 244!

In the Classics League, it's the Eightballs by four points over the Markers and Has Beens. Again Bill Ladd proves the big hero, posting a recent 275 single game!

The Y-12 Mixed League still keeps the Hits & Misses atop the heap by a mere two points, a breath ahead of the Rollers. Walt Joest rolled a 622 series recently.

ORNL BOWLING

The Ten Pins hold a rather commanding lead in the A League, with more than 20 points, far in advance of the Pockets. The Misfits' Phil McCulley recently rolled a 220 game.



Grover Herrell

Y-12ers ride the rapids down the Colorado River

How about an interesting vacation? Grover Herrell, Receiving; and John McMurray, Accounting and Budget, can give you an interesting tip. How about riding down the Colorado River 300 miles on a raft? The 10-day trip was recently taken by the two Y-12ers. This was the second time around for McMurray, too. What you do is board the raft at Lee's Ferry, and ride to Temple Bar, Ariz., just above Hoover Dam. You pull ashore and camp at night on the adventuresome trip. Who said it's more fun to stay home, asleep in a hammock?

ORGDP BOWLING

ORGDP Women's League sees the Pay-Offs six points in the lead, with the Up-Towners and Spotters tied for second place.

The Rookies eked out a half-point lead in the ORGDP Wednesday League recently, with Jim Snyder posting a 253 single game! Charlie Goodman posted a 639 scratch series the same night. The Amps are in second place, and the Planners coast in to a close third position.

The All Stars are seven and one-half points ahead of the City Slickers in the ORGDP Tuesday League. C.L. Butcher rolled a 234 game recently and Del Ducay posted a 245 handicap tally.

New drugs--fantasy & reality

(Editor's Note: Dr. Lincoln would like to begin answering health questions from employees. Questions will be handled in strict confidence, as they are handled in our Question Box. Just address your question to "Medicine Chest," c/o NUCLEAR DIVISION NEWS, Building 9704-2, Stop 2, or call the news editor in your plant, and give him your question on the telephone.)

By: T.A. Lincoln, M.D.

Say you saved money for years for a vacation trip to see and photograph the wild animals still roaming the Serengeti Plain in Tanzania, Africa. You go and while there, you almost accidentally stumble onto a love potion used by the Masai natives. You try it and are impressed by its effects. Being a chemist, you suddenly have a marvelous fantasy. You take a sample home, analyze it, find the active ingredient, and synthesize it in your basement laboratory. Soon you have a patent and you're on your way to becoming rich!

Sorry! No way! Even if you were able to do all the things you imagined, you would never be able to meet the safety and effectiveness requirements of the Food and Drug Administration (FDA). Hundreds of pharmacologists, chemists



and physicians are usually required to test a drug before it can be put on the market.

The FDA defines a new drug as one not generally recognized by qualified experts as safe and effective for use under the conditions prescribed or recommended in its labeling. An accepted drug being proposed for a different or new use is considered a "new" drug. Combining approved drugs in a new way may make the combination a "new" drug, even though the individual components are not new. Even new dosage forms or new methods of manufacture or application may make it technically a "new" drug.

Tests are a must

Before human use can be considered, extensive animal toxicity studies are required. The drug has to be administered in the same fashion as it will be used in humans. For example, if it is to be given to humans by intravenous injection, the animals must be tested in the same way. When the drug is expected to be used in humans over only a short time, such as up to three months, it has to be tested in two species of animals for at least six months. The two species most commonly used are rodents, such as rats or mice, and dogs.

Observations which must be made on large numbers of these animals include body weight, food consumption, behavior, blood counts and clotting, liver and kidney function tests, effects on blood sugar and various metabolic studies. The eyes must be examined carefully since several new drugs have been found to have delayed ocular effects. When the test animals die, careful pathological studies are necessary to determine the cause of death and previously undetected diseases.

Enzyme induction

When the drug will be used continuously over long periods of time, chronic toxicity studies must be performed. For

example, a one year toxicity study conducted in rodents and dogs is required before any clinical evaluation can begin on a new oral contraceptive drug. Before a large scale clinical trial can begin, toxicity studies of up to seven years' duration in dogs and up to ten years in monkeys must have been under way for at least two years.

Recently it has been found that some drugs can stimulate their own metabolism. This phenomenon, called enzyme induction, can lead to erroneous conclusions in animal studies and unanticipated hazards in human use. Tests for enzyme induction and for interaction with other drugs are now becoming standard. Tests are being developed to determine the hazards of taking a drug during pregnancy. The risk of genetic (mutagenic) effects are also being studied.

Double blind study

When the animal studies fail to show any dangerous toxicity, clinical studies can begin. In Phase I, the drug is given to healthy volunteers who are studied in great detail under carefully controlled circumstances. Numerous metabolic, chemical, and hematology studies are conducted. In Phase II, the drug is administered to small numbers of carefully supervised patients who have the disease for which the drug is thought to be effective. Extensive testing and observations are conducted to look for toxic effects and evidence of the drug's effectiveness. In Phase III, extensive clinical trials are conducted under less carefully controlled circumstances. Great care is taken to look for the rare toxic effects in people who for some unknown reason are hypersusceptible.

Efficacy is usually tested using a double blind study. The drug and a similarly appearing placebo, both coded, are given to patients without their or the physician's knowing which was which. The effects of the placebo are compared with the drug only after the trial has been completed and the code broken.

Called biopharmaceutics

Such safety testing is extremely expensive and increasingly is requiring exotic techniques. Some manufacturers complain that it is becoming so difficult and expensive that they cannot afford to conduct the required tests unless the prospects for a large market are good. As a consequence, drug research for rare diseases is often handicapped.

Safety testing has even given birth to a new subspecialty called biopharmaceutics. It is the study of the relationship of the physical and chemical properties of a drug and its dosage forms to its biological effects.

The days of the individual marketing of a new drug are long past. Ideas take years to develop and test. Your safety is protected and you have some assurance that a new drug is effective. The price you pay, however, is a much longer delay in getting a new treatment on the market.



ORGDP DANCE COMMITTEE—Dusting off the snowflakes and mistletoe are the above ORGDP employees busy with plans for the big Christmas dinner-dance, set for Saturday, December 2, at the Oak Ridge Civic Center. In the front row, from left, are John Arendt, Evelyn Cole and Gordon Fee. In the back row are Bob McGill, Pat Pasquier, Wayland Blake, Herb Trammell, Houston Wood and George Kidd. Tickets for the dance are on sale throughout the plant.

19th Amendment will provide music for ORGDP bash Dec. 2

Oak Ridge Gaseous Diffusion plant employees have picked Saturday, December 2, as early date for their big Christmas dinner-dance.

The festivities begin with a social hour at 7, dinner at 8, and dancing from 9 until 1, at the Civic Center in Oak Ridge. The committee has already been busy on arrangements, decorations, food, entertainment, etc.

The Nineteenth Amendment, an all-girl orchestra, will present music, and plant authorities vow that they can play anything from hard rock to sentimental oldies to appeal to a cross-section of tastes.

Helma's will cater the affair, and arrangement committeemen are promising the best Christmas dance ever. Tickets are scattered throughout the plant and are selling for \$6 each.

They are limiting the affair to 500 folks, so you'd better get your ticket

early. Retirees may make arrangements for tickets by calling Evelyn Cole, 483-8611, extension 3-3414.

Mistletoe ball set Dec. 1 in Paducah

The annual Mistletoe Ball for all Paducah Plant employees and their guests will be held at the Community Civic Center, Friday, December 1. Back by popular demand will be the Bill Black Combo from Memphis, with the "Memphis Sound." Hours for the dance will be from 9 p.m. until 1 a.m.

Tickets purchased at the door will be \$2 per person, and advanced tickets are \$1.75. Advanced tickets may be purchased from Don Lane, Ardyce Ballard, Mary Gray, Tommy Thompson, Barbara Hook, Jeff Vandeven and Ray Fields.



WEDDING CONGRATULATIONS — Jeanette M. Jones became the bride of Don Marshall Schnuck September 2. Fellow employees, led by Ed Kohler gave her a gift from the Planning and Technical Support Division at the Paducah Plant. After a short wedding trip to Nashville, the couple is residing in Paducah. The bridegroom is employed at the Tennessee Valley Authority's Shawnee Steam Plant.

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CALENDAR of EVENTS

TECHNICAL November 17

Biology Division Seminar: "Regulation of Gene Expression During Amphibian Development," George M. Malacinski, Department of Zoology, Indiana University. Tower 1 Conference Room, Building 9207, Y-12, 12:15 p.m.

Industrial Editing Institute: General sessions. UT Communications Building, Main Auditorium, 8:30 a.m.

November 22

Solid State Division Seminar: "The Electronic Structure of Transition Metals," A.R. Mackintosh, Danish AEC, Riso. Conference Room, Building 3025, ORNL, 10 a.m.

November 29

Chemical Technology Division Seminar: "Vapor-Liquid Distribution of Krypton and Xenon in CO₂," K.J. Notz. Central Auditorium, Building 4500N, ORNL, 3 p.m.

November 30

UT Department of Chemistry General Seminar: "Vibrational Spectroscopy of Solids," John Bates. Room 414, UT Buehler Hall, 1:30 p.m.

Instrumentation and Controls Division Information Meeting: ORNL.

December 1

Environmental Sciences Division Seminar: "Indices of Healthy and Perturbed Aquatic Communities," Dr. Ruth Patrick, Department of Limnology, Academy of Natural Sciences, Philadelphia, Pa. East Auditorium, Building 4500N, ORNL, 10 a.m.

December 6

Chemical Technology Division Seminar: "Development of Continuous Fluorimeters Having Frozen-Wall Corrosion Protection," J.R. Hightower. Central Auditorium, Building 4500N, ORNL, 3 p.m.

COMMUNITY November 19

Dvorak String Quartet (Chamber series): Oak Ridge Playhouse, 8:15 p.m. Admission: adults, \$4; students, \$2.

Patents granted

To Lamont C. Bate, Herman E. Zittel and Sebastian B. Lupica, ORNL, for "Base-Borate Reactor Safety Spray Solution for Radiolytic Hydrogen Suppression."

To Fletcher L. Moore, ORNL, for "Separation and Recovery of Americium from Curium and Other Elements."

To John D. Sease, William H. Pechin and Ronnie A. Bradley, ORNL, for "Nuclear Fuel Having Minimum-Gas-Release Properties."

99.5 percent of United Fund goal!

(Continued from page 1)

as well as many other civic endeavors. So often we are caught up in the busy routine of everyday living that we take things for granted and forget to say a simple thank you or express appreciation. It is not possible to meet and thank each Knox County employee personally. Therefore, I would be grateful if in some way you could share this letter with them. I would like to say to each one, "We do appreciate you. Without you, we might not be able to say Knoxville is a better place in which to live because we help each other."

In addition to the contributions by employees, Union Carbide Corporation made a corporate gift to Anderson County totalling \$15,000.

Hats off

ORGDP employees pledged \$59,170, and these divisions made their goals: Separations Systems, Gaseous Diffusion Development, Operations Analysis, Plant Superintendents, Engineering, Shift Operations and Security, and the Nuclear Safety Group. These groups of hourly employees at ORGDP achieved their goals: Laundry Workers, Food Services, Janitors, Building Maintenance, Development Maintenance, Fabrication and Maintenance Trainees, Power and Utilities Maintenance, Technical Office Services, Materials Management, Oak Ridge Area Electricity Distribution, and Barrier Operators.

Y-12 employees pledged \$147,375 and these divisions made their goals: Accounting and Budget, Assembly, Engineering, Fabrication, Maintenance, Product Engineering and Scheduling, Superintendents and Technical. These bargaining units at Y-12 made their goals: Bricklayers, Boilermakers, Insulators, Chemical Workers, Iron Workers, and Culinary Workers.



ORNL

RIDE from Ogontz Lane to Nebraska Road each work day. Pearl Coffey, plant phone 3-1914 or Oak Ridge 483-1656.

RIDE or join car pool from "the village" in Sequoyah Hills to North or West Portal, 8 a.m. Jack Mattice, plant phone 3-6617 or Knoxville 588-1073.

TWO CAR POOL MEMBERS from vicinity of Waddell, West Outer or Pennsylvania to East or North Portal, 8:15 a.m. Tom Burnett, plant phone 3-6939 or Oak Ridge 483-1975 or Dick Reed, plant phone 3-1801 or Oak Ridge 483-3458.

Y-12

RIDE from Norwood section, Knoxville, to Pine Ridge Portal, straight day. Mary Brogan, plant phone 3-5896, home phone Knoxville 687-2550.

CAR POOL from West Haven section, Knoxville, to Central Portal, straight day. Fred George, plant phone 3-5495, home phone Knoxville 522-5793.

CAR POOL member from Norwood or Cherokee Ridge area, Knoxville, to any portal, straight day. E.C. Keith, plant phone 3-7615, home phone Knoxville 947-8573.

RIDERS from West Knoxville to any portal, straight day. Jim George, plant phone 3-7277, home phone Knoxville 588-6474.

ORNL employees pledged \$124,100, and these divisions made their goals: Analytical Chemistry, Environmental Information, Mathematics, Neutron Physics, Reactor Chemistry, Reactor, Thermonuclear, Director's, Plant and Equipment, Health, Inspection Engineering, Operations, Personnel, Information, Budget Office, General Engineering and ORNL-NSF Environmental Program. These bargaining units at ORNL made their goals: Boilermakers, Carpenters, Insulators, Biology, Laundry Workers, Firemen, Iron Workers and Riggers, Machinists and Instrument Makers, Teamsters, Leadburners, Instrument Technicians, and Painters.

Analytical Chemistry, Environmental Information, Mathematics, Neutron Physics, Reactor Chemistry, Reactor, Thermonuclear, Director's, Plant and Equipment, Health, Inspection Engineering, Operations, Personnel, Information, Budget Office, General Engineering and ORNL-NSF Environmental Program. These bargaining units at ORNL made their goals: Boilermakers, Carpenters, Insulators, Biology, Laundry Workers, Firemen, Iron Workers and Riggers, Machinists and Instrument Makers, Teamsters, Leadburners, Instrument Technicians, and Painters.

General Staff employees pledged \$23,600 and these divisions made their goals: General Accounting, Computing Technology Center, Purchasing, Auditing, Executive Offices, General Industrial Relations, and Law.

Roane State to offer Y-12 science courses

Roane State Community College, in cooperation with the Atomic Energy Commission, Oak Ridge Associated Universities and the Training and Technology project of Union Carbide, will offer night courses in Y-12 during the winter quarter, beginning January 3.

The courses will be FST 1030 - Industrial Hazards, section I, to be offered Mondays; FST 1030 - Industrial Hazards, section II, to be offered Tuesdays; POL 1030 - State Government, section I, Wednesdays; and POL 1030 - State Government; section II, Thursday. EET 1010 - Electronics (DC) will be taught Monday and Friday from 5 to 10 p.m.

The above courses carry full college credit and may lead to associate science degrees in fire science or electronics technology. There are no prerequisites, and the courses are eligible for expense refund through the Carbide Education Assistance program.

John McCormick, Y-12; and Ken Dungan, ORGDP, will act as instructors for the industrial hazards courses.

Employees interested in taking the courses should contact Dan Johnson, extension 3-5493; or Carroll Marsalis, Roane State Community College, Harri-man telephone 882-0342.

Company Service

ORGDP 20 YEARS

Nelline P. Ross, Edward S. Burnette, Hal C. Tunnell and George M. Vowell.



WED RECENTLY — A summer wedding united Miss Mary Coble and Dennis E. Gray recently in Paducah, Ky. Both the bride and bridegroom are Union Carbide employees, she in Special Services and he in the Maintenance Division.